(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization International Bureau





(43) International Publication Date 7 April 2005 (07.04.2005)

PCT

(10) International Publication Number WO 2005/031202 A1

(51) International Patent Classification⁷: 31/40

F16K 31/383,

(21) International Application Number:

PCT/DK2004/000654

(22) International Filing Date:

28 September 2004 (28.09.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

103 45 856.5 30 Sep

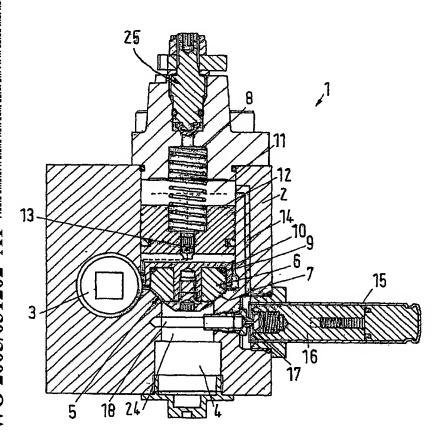
30 September 2003 (30.09.2003) DE

- (71) Applicant (for all designated States except US): DAN-FOSS A/S [DK/DK]; DK-6430 Nordborg (DK).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): ENTWISTLE, Richard, Thomas [GB/DK]; Ollundsbjerg 49, DK-6470 Sydals (DK). HAUGAARD, Erik [DK/DK]; Sønderborg Landevej 4, DK-6300 Gråsten (DK).

- (74) Common Representative: DANFOSS A/S; Patent Department, DK-6430 Nordborg (DK).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: VALVE ARRANGEMENT



(57) Abstract: The invention concerns a valve arrangement (1) with a housing (2), an inlet connection (3) and an outlet connection (4), which are connected with each other via a flow path, in which is located a closing device (5), which has a valve seat (7) and a valve element (6) interacting with the valve seat (7), the valve element (6) being loaded in the direction of the valve seat (7) by a resetting device (8) and being acted upon on the side facing the valve seat (7) by a pressure in a first pressure chamber (9), said pressure corresponding to the pressure in the inlet connection (3), when the closing device (5) is closed, and on the side facing away from the valve seat (7) by the pressure in a second pressure chamber (11), which is connected with the outlet connection (4) via a channel arrangement (14), in which is located at least one auxiliary valve (15), and with the first pressure chamber (9) via a throttle (13). It is endeavoured to reliably ensure that the closing device (5) opens. For this purpose, it is provided that the channel arrangement (14) ends in a suction nozzle arrangement (18), which is located in the flow path.

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.